

Astronomical Yearbook (Cont.)

SOV/5461

and K. G. Shumikhina; table for determining latitude by the altitude of the Polar Star - K. G. Shumikhina and P. A. Gutkina; preparation of manuscript for publication - V. G. Kudinova; review and edition of "Explanatory Notes", D. K. Kulikov. There are no references.

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Card 4/16	

84573

3,2200

S/035/60/000/009/004/016  
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 9,  
p. 11, # 8680

AUTHORS: Kulikov, D.K., Batrakov, Yu.V.

TITLE: A Method for Improving the <sup>✓</sup>Orbits of Earth's Artificial Satellites  
on the Basis of Observations Whose Instants are Known Approximate-  
ly

PERIODICAL: Byul. In-ta teor. astron. AN SSSR, 1960, Vol. 7, No. 7, pp. 554-  
569 (Engl. summary)

TEXT: The authors describe a method for improving the orbits of artificial satellites when the instants of their observations are known approximately. In the practice of improving the elements of planetary orbits such a problem did not arise due to their small motion across the sky, so that observational instants, even erroneous by as much as  $1^s$ , could be considered as quite precise. Artificial satellites move across the sky by  $1-2^\circ$  during  $1^s$ , therefore any error in the observation instant will considerably affect the position of the satellite. Im-

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S/D 35/60/000/009/004/016  
A001/A001

A Method for Improving the Orbits of Earth's Artificial Satellites on the Basis of Observations Whose Instants are Known Approximately

proving the accuracy of time reading is a natural, but not the sole, method of improving the accuracy of elements of the satellite orbit obtained from the observations. A new method of compiling condition equations is presented in the article: instead of usual variations  $\Delta \alpha, \Delta \delta$ , are used the variations  $\Delta g, \Delta G$  along the perpendicular to the apparent orbit of the satellite and along the tangent to the apparent orbit in the sky. Condition equations for  $\Delta g$  do not depend on errors in reading the instants of observation, but equations for  $G$  do depend on them. The analysis of condition equations has shown that observations near zenith permit reliable determinations of  $\Delta i$  and  $\Delta \Omega$  from the equations for  $\Delta g$ . The equations for  $\Delta G$  permit determinations of corrections to elements  $\omega, M_0, n, e$ , but in this case errors in reading the instants affect the accuracy of the elements obtained. In case of sloping passages of the satellite, the equations for  $\Delta g$  will contain 4 unknowns:  $\Delta i, \Delta \Omega, \Delta n$  and  $\Delta e$ , whose determination will be almost independent of errors in observation instants. The method is described for using artificial satellites for geodetic purposes, which

Card 2/3

84573

S/Q 35/60/000/009/004/016  
A001/A001

A Method for Improving the Orbits of Earth's Artificial Satellites on the Basis of  
Observations Whose Instants are Known Approximately

permits the effect of errors in observation instants to be reduced to a minimum.  
The method described in the article is illustrated by an example of improving  
elements by using condition equations. There are 8 references.

V.F. Proskurin

Translator's note: This is the full translation of the original Russian ab-  
stract.

Card 3/3

S/035/61/000/007/009/021  
A001/A101

3,1400

AUTHOR: Kulikov, D.K.

TITLE: Integration of motion equations of celestial mechanics on electronic computers by the Cowell quadrature method with automatic step selection

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 7, 1961, 5, abstract 7A57 ("Byul. In-ta teor. astron. AN SSSR", 1960, v. 7, no. 10, 770 - 797)

TEXT: The author derives Cowell's formula with an accuracy up to terms of 12th order with respect to the integration step. Relations were found which make it possible to transform the integration table for any step  $\omega = \lambda h$ , and particular cases of increasing and decreasing the step by a factor of two are considered. A criterion of integration step variation is developed, when terms up to fourth differences inclusive are taken into account in the integration formula; working formulae are given for this particular case to recalculate the integration table at increasing or decreasing the integration step by two times.

Card 1/2

Integration of motion equations ...

S/035/61/000/007/009/021  
A001/A101

✓  
8

An operator logical diagram of the program is presented for carrying out the integration process with automatic step selection. Working formulae are also given for integration taking into account sixth and eighth differences at changing the integration step by 2. There are 15 references.

N. Yakhontova

[Abstracter's note: Complete translation]

Card 2/2

ACCESSION NR: AR4014613

S/0269/64/000/001/0022/0022

SOURCE: RZh. Astronomiya, Abs. 1.51.151

AUTHOR: Kulikov, D. K.

TITLE: Ephemerides of the major planets and the tasks of astrometry

CITED SOURCE: Tr. 15-y Astrometr. konferentsii SSSR, 1960. M.-L., AN SSSR, 1963, 77-86

TOPIC TAGS: ephemeris, major planet, astrometry, superior planet, Newcomb theory, Mars, Venus, inferior planet, planetary mass, planet, Sun, solar observation

TRANSLATION: Ephemerides of the superior planets have been published since 1960 on the basis of the results of numerical integration from 1653 through 2060, done at the Washington Observatory. Newcomb's theory still is used for the inferior planets (Mercury, Venus, Earth, Mars) although it is well known that the theory contains appreciable errors. A new analytical theory is being developed now at

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ACCESSION NR: AR4014613

Washington for Mars, for which these errors are particularly large; the Ross corrections already are allowed for in the ephemerides. The needs of ephemeridal astronomy now therefore are satisfied for the most part for the superior planets, but there are considerable discrepancies between observation and theory for the inferior planets. The principal factors responsible for these discrepancies are:

1. Errors in development of analytical theories. These errors are large for Mars -- the maximum deviations of the transverse component  $\Delta\zeta$  between computations based on Newcomb's theory and the results obtained by numerical integration in 1961-1963 are (in astronomical units)  $288 \cdot 10^{-8}$ .
2. Errors in the masses of the planets. The maximum influence on  $\Delta\zeta$  for Mars is  $251 \cdot 10^{-8}$  and for Earth is  $70 \cdot 10^{-8}$ .
3. Errors in orbital elements. For the Earth the corresponding influence is  $170 \cdot 10^{-8}$  and for Venus is  $252 \cdot 10^{-8}$ .
4. Errors in ephemeris time. Their influence for Venus is  $40 \cdot 10^{-8}$ . The total geocentric error for Mars can attain  $6''$ , for the Sun  $2''$  and for Venus  $4''$ . Equations are derived relating the nonclosures of observations ( $\Delta\alpha, \Delta\delta$ ) of the sun and corrections of the zero points in the catalogues ( $\Delta\alpha_0, \Delta\delta_0$ ) and the Earth's orbital elements ( $\Delta L_0, \Delta n, \Delta\pi, \Delta e, \Delta\epsilon$ ). The conditions under which individual unknowns are derived with maximum weights are considered. A total of 9,600 solar observations at

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ACCESSION NR: AR4014613

Greenwich, Washington, the Cape of Good Hope and Ottawa were used to determine the mentioned values. The report points out a need for greatly increasing work in the Soviet Union on observations of the Sun and the major planets. Bibliography of 16 items. Kh. Potter. .

DATE ACQ: 19Feb64

SUB CODE: AS

ENCL: 00

Card 3/3

**"APPROVED FOR RELEASE: 08/23/2000**

**CIA-RDP86-00513R000927420007-0**

**APPROVED FOR RELEASE: 08/23/2000**

**CIA-RDP86-00513R000927420007-0"**

evaluation of the accuracy of the coordinates of points, based on the  
independent on the errors in the development of Newcomb's analytical theory. the

10807-65

**"APPROVED FOR RELEASE: 08/23/2000**

**CIA-RDP86-00513R000927420007-0**

**APPROVED FOR RELEASE: 08/23/2000**

**CIA-RDP86-00513R000927420007-0"**

KULIKOV, D.K. [deceased]

Ephemerides of major planets and the astrometry. 1961. Inst. teor.  
satron. 9 no.10:631-667 '64. (MHA 17:12)

BA  
B-III

KULIKOV, D V

Mechanized sowing of granular superphosphate together with the seeds of grain crops. D. V. Kulikov and S. K. Zaleskii (Soviet Agron., 1951, No. 8, 76-78; *Soils & Fert.*, 1951, 14, 477).— Conditions for the successful sowing by a recd apparatus of a mixture of grain seeds and granular fertilizers are given. C. B. NORTH.

1. KULIKOV, D. V.
2. USSR (600)
4. Plowing
7. Effect of shallow winter breaking on the operation of a plow. Mekh. i elek. sel'khoz. No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KULIKOV, D.V., nauchnyy sotrudnik; ZALESSEKIY, S.K., nauchnyy sotrudnik;  
YUDELEV, F.M., nauchnyy sotrudnik.

Attachment to SD-24 and SZT-47 tractor-drawn drills for the  
placement of granulated superphosphate. Sel'khoz mashina no.4:  
13-14 Ap '56. (MLRA 9:7)

1. Leningradskoye otdeleniye Vsesoyuznogo instituta mekhanizatsii.  
(Fertilizer spreaders)

SHULIKOV, D.V.; PLENETSKIIY, V.P.

Mechanism of some secondary symptoms in meningiomas of the olfactory fossa. Vop. neirokhir. no.1171-21. '65.

(MIRA 18:10)

1. Ukrainskiy nauchno-issledovatel'skiy Institut neyrokhirurgii (direktor -- prof. A.P. Romodanov), Kiev.

40937

S/109/62/007/007/005/018  
D266/D308

9.1310 ,  
AUTHOR: Kulikov, E. L.

TITLE: Variational principle for UHF circuits

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 7, 1962,  
1091-1099

TEXT: The purpose of the paper is to propose a new variational formulation suitable for the calculation of lossy microwave circuits. The derivation starts with the wave equations (permeability and permittivity of the medium are regarded as tensor quantities) and leads to the variational integrals

$$I(\vec{E}) = \int_V (\text{rot } \vec{E} \mu^{-1} \text{rot } \vec{E} - k^2 \vec{E}_\epsilon \vec{E}) dv - \oint_S [\vec{E}, \mu^{-1} \text{rot } \vec{E}] \vec{n} ds = 0 \quad (1)$$

Card 1/3

Variational principle for ...

S/109/62/007/007/005/018  
D266/D308

$$I(\vec{H}) = \int_V (\text{rot } \vec{H} \epsilon^{-1} \text{rot } \vec{H} - k^2 \vec{H} \mu \vec{H}) dv - \oint_S [\vec{H}, \epsilon^{-1} \text{rot } \vec{H}] \vec{n} ds = 0 \quad (2)$$

where  $\vec{n}$  - unit vector normal to the surface S. Equations (1) and (2) are stationary in respect of small field variations if the tensors  $\epsilon$  and  $\mu$  are symmetric and if the trial functions are chosen in such a way that the values  $E_s$  (tangential component of the electric intensity) and  $(\mu^{-1} \text{ and curl } \vec{E})_s$  on the boundary of S agree with those of the exact solution. If the volume V contains smaller volumes  $V_1$  whose conductivity  $\sigma_1$  is large but finite, the Leontovich boundary conditions (Issledovaniya po rasprostraneniyu radiovoln (Radio Wave Propagation Studies), Sb. 2, Izd. AN SSSR, 1948, 5 - 12) can be used leading to a modified version of the variational integral (1). Three examples illustrate the applicability

Card 2/3

Variational principle for ...

S/109/62/007/007/005/018  
D266/D308

of the method: (1) Attenuation of the  $H_{01}$  wave in a circular waveguide, (2) calculation of the scattering matrix of an n-port junction (only one propagating mode permitted), (3) thick diaphragm in rectangular waveguide. The reflection coefficient calculated in the last example is compared with experimental results showing good agreement. There are 5 figures. X

SUBMITTED: November 4, 1961

Card 3/3

EWI(1)/RDS/EEC-2

AFMTC/APPO/ASL/ESD-3/RAIR

5/109/63/100/100 024 030

Author: Kulikov, E. L.

Title: Computing waveguide circuits with a partial anisotropic space charge

Periodical: Radiotekhnika i elektronika, v. 8, no. 1, 1963, 1-11

The "brief communication" under review is an extension of a report previously published by the same author, in the same periodical, 1962, v. 7, no. 7, concerning the formulation of a variational principle for HRF circuits. The author's work was based on the assumption that the dielectric medium properties are uniform in the area of investigation, and that the magnetic field is constant. The author suggests that the variational principle can be extended to arbitrary anisotropic media as well. The author's work is similar to the work as being:

$$\text{rot } \mu^{-1} \text{rot } \vec{E} - \vec{E} \epsilon \vec{E} = 0,$$

where  $\epsilon$  and  $\mu$  are the tensors of dielectric and magnetic permeability of the medium, respectively. On the basis of the foregoing, he then develops a lengthy functional equation which he finally reduces to a form applicable to a wide variety of situations.

SUBMITTED: October 30, 1962

Card 1/1

L 18391-63

EW(r)/EW(m)/BDS

AFFTC

ACCESSION NR: AP3003728

S/0109/63/008/007/1267/1268

51

AUTHOR: Kulikov, E. L.

TITLE: Calculating electrodynamic hollow structures having finite-conductance metal walls

24

SOURCE: Radiotekhnika i elektronika, v. 8, no. 7, 1963, 1267-1268

TOPIC TAGS: electrodynamic structure

ABSTRACT: A variational method for calculating resonators and waveguides suggested by the author earlier (Radiotekhnika i elektronika, 1962, 7, 7, 1091) is compared with the conventional method of calculating losses associated with the finite conductance of metallic regions. Q-factor of a resonator and energy-flux attenuation in a regular waveguide are used as examples of application of the two above methods with this conclusion: The conventional formulas are, in fact, a first coarse approximation of the variational method. Orig. art. has:

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L 18391-63  
ACCESSION NR: AP3003728

0

10 formulas.

ASSOCIATION: none

SUBMITTED: 15Dec62

DATE ACQ: 02Aug63

ENCL: 00

SUB CODE: PH, GE

NO REF SOV: 005

OTHER: 001

Card 2/2

ACCESSION NO: AP4038638

S/0109/64/009/005/0800/0804

AUTHOR: Kulikov, E. L.

TITLE: Variational method of calculating lossy periodic waveguides

SOURCE: Radiotekhnika i elektronika, v. 9, no. 5, 1964, 800-804

TOPIC TAGS: waveguide, periodic waveguide, lossy waveguide, waveguide desing

ABSTRACT: The variational method suggested by Sh. Ye. Tsimring (Radiotekhnika i elektronika, 1957, v. 2, no. 1, p. 3) is further developed to cover practical periodic waveguides having a finite conductivity of their metal walls; no restriction is imposed on the losses in the filling medium. Leontovich's boundary conditions are considered as satisfied at the walls. The developed formulas are tried on a practical example of a comb-type delay system with square corrugations. Use of the formulas is shown in an example of a corrugated delay system. "In conclusion, the author is sincerely thankful to Sh. Ye. Tsimring and L. L. Kats for their attention to the work and the valuable advice in the course of the work."  
Orig. art. has: 2 figures and 15 formulas.

Card 1/2

ACCESSION NO: AP4038638

ASSOCIATION: none

SUBMITTED: 04Mar63

SUB CODE: EC

DATE ACQ: 05Jun64

NO REF SOV: 004

ENCL: 00

OTHER: 003

Card 2/2

"APPROVED FOR RELEASE: 08/23/2000

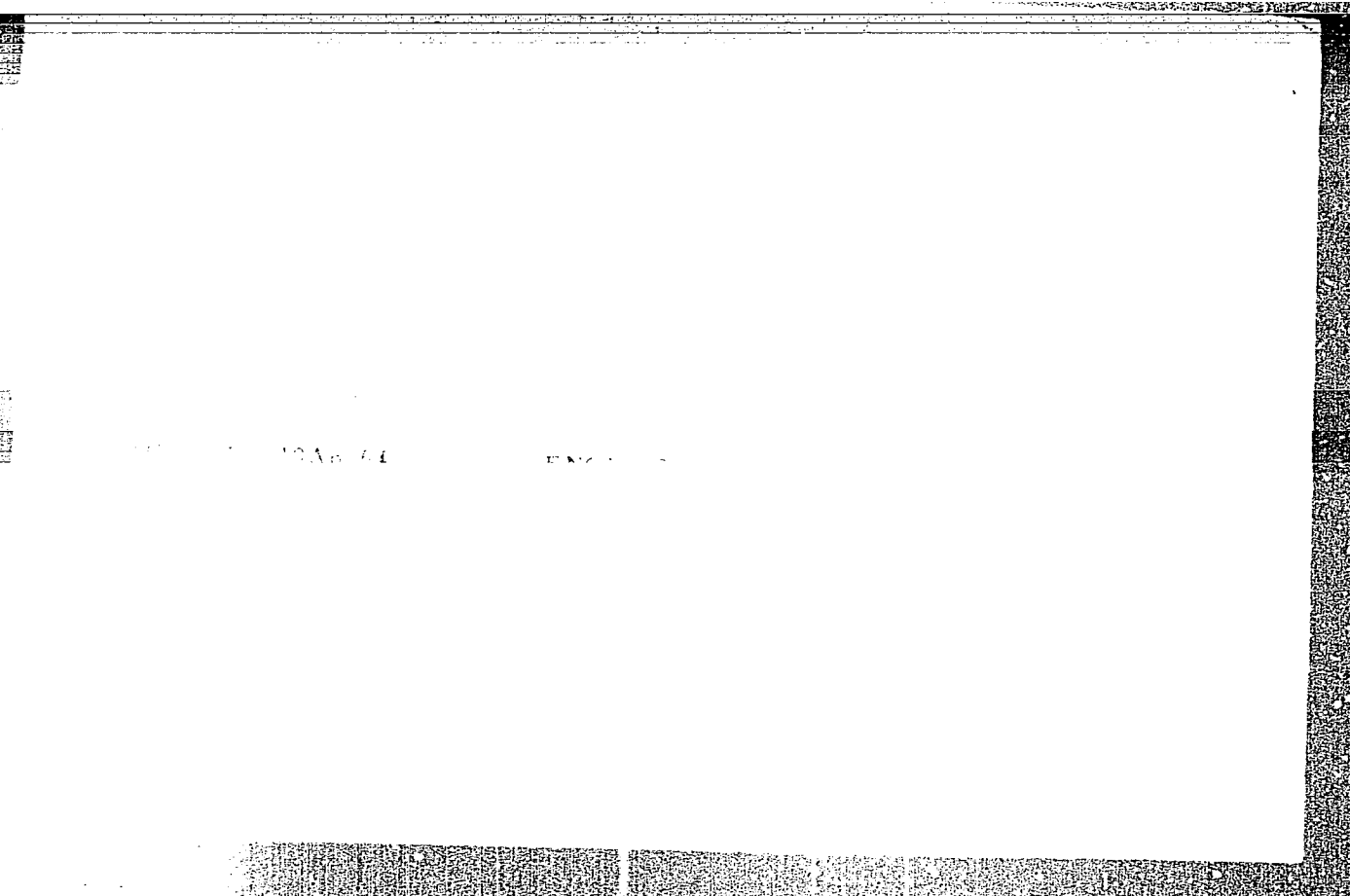
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APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927420007-0"

KULIKOV, E.L.

Variational methods for calculating microwave circuits. Radiotekh.  
i elektron. 10 no.3:559-561 Mr '65.

(MJRA 18:3)

L 33579-66 EWT(1)

ACC NR: AR6016256

SOURCE CODE: UR/0058/65/000/011/H038/H039

AUTHOR: Kulikov, E. L.

TITLE: Variational method of calculating multimode waveguides with inhomogeneities

SOURCE: Ref. zh. Fizika, Abs. 11Zh263

REF SOURCE: Tr. molodykh uchenykh. Saratovsk. un-t. Vyp. fiz., Saratov, 1965, 75-80

TOPIC TAGS: waveguide coupler, waveguide, boundary value problem, Fourier analysis, scattering matrix, matrix element

ABSTRACT: A variational method is proposed for calculating multimode waveguides with inhomogeneities; this method is a development of a method described earlier (RZhFiz, 1962, 12Zh144). The author considers a generalized waveguide structure, comprising a junction of N regular waveguides. A procedure is described for calculating the elements of the scattering matrix of such a device with the aid of functionals expressed in terms of integrals over the surfaces of the waveguide cross sections, at sufficiently large distances from the junction. By substituting into the functionals trial functions that satisfy the necessary boundary conditions, a relation is obtained between the Fourier coefficients of the complex amplitudes of the fields. Inasmuch as these coefficients are uniquely related with the S-matrix elements, equations are thus obtained for the elements of the scattering matrix. An example of the calculation is given. [Translation of abstract]

SUB CODE: 09, 12

Card 1/1

ACC NR: AP6036379

SOURCE CODE: UR/0109/66/011/011/2074/2077

AUTHOR: Kats, L. I.; Kulikov, E. L.

ORG: none

TITLE: Feasability of using a periodic structure as a <sup>45</sup>transmission line for the millimeter wave band

SOURCE: Radiotekhnika i elektronika, v. 11, no. 11, 1966, 2074-2077

TOPIC TAGS: transmission line, radio transmission, microwave component, millimeter wave, dielectric waveguide

ABSTRACT: A periodic structure made of flexible dielectric tape with thin metal transverse strips deposited on its surface is proposed for millimeter-wave transmission. The Maxwell equation for a two-dimensional problem is used to determine the geometric parameters and propagation data of the structure. The experiment was carried out using Teflon tape (thickness,  $0.09 \lambda$ ; width,  $2.5 \lambda$ ; and specific inductive capacitance,  $\epsilon = 2.08 - j 0.02$ ). The periodic structure had the following dimensions (see Fig. 1):  $2a = \frac{\lambda}{2} + 0.12\lambda$ ,  $2d = 0.55\lambda$ ,  $k(d - c) = 0.3$ ,

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ACC NR: AP6036379

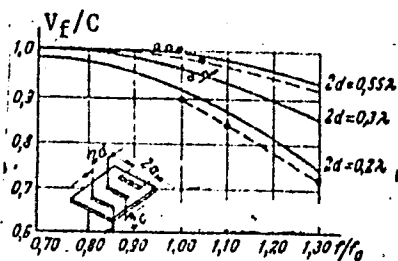


Fig. 1. Dispersion ( $a = 0.12\lambda$ ,  $k(d - c) = 0.3$ )

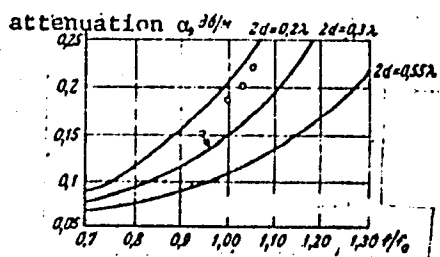


Fig. 2. Structure attenuation, db/m ( $a = 0.12\lambda$ ,  $k(d - c) = 0.2$ ) (points are experimental data)

Card 2/4

ACC NR: AP6036379

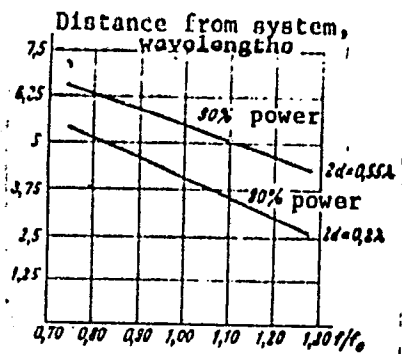


Fig. 3. Distance from the structure on which 90% of the transmitted power is concentrated ( $a = 0.12\lambda$ ,  $k(d - c) = 0.3$ )

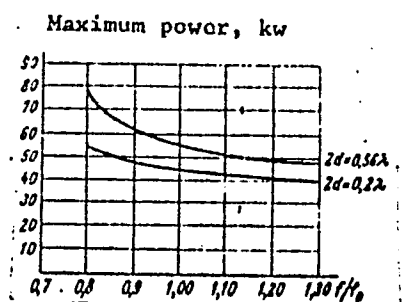


Fig. 4. Maximum theoretical power which can be transmitted by the structure ( $a = 0.12\lambda$ ,  $k(d - c) = 0.3$ )

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ACC NR: AP6036379

and also  $2a = \frac{\lambda}{2} + 0.13\lambda$ ,  $2d = 0.3\lambda$ ,  $k(d - c) = 0.2$ ,  $k = \frac{2\pi}{\lambda}$ . The results of the study are presented in Figs. 1—4. Orig. art. has: 6 figures and 1 formula.

SUB CODE: 09/17/ SUBM DATE: 21Jan66/ ORIG REF: 004/ OTH REF: 003/  
ATD PRESS: 5106

Card 4/4

ACC NR: AP7002018 (A) SOURCE CODE: UR/0142/66/009/005/0610/0615

AUTHOR: Kulikov, E. L.; Il'in, V. K.

ORG: none

TITLE: New method of measuring line width of ferromagnetic resonance of ferrites

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 5, 1966, 610-615

TOPIC TAGS: ferromagnetic resonance, ferrite

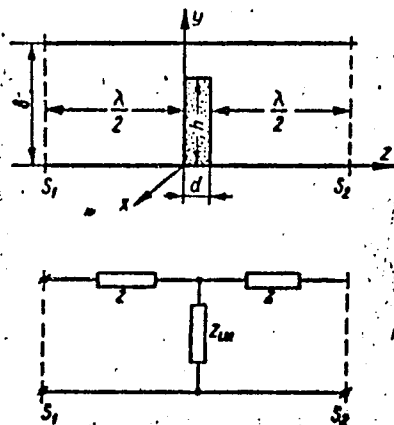
ABSTRACT: A thin-ferrite-plate-loaded waveguide segment is replaced by an equivalent quadripole (see figure), and formulas for the component impedances of the latter are derived by a variational method. Applied to the case of a ferrite-loaded rectangular waveguide terminated with a matched load, the above formulas permit deducing this expression for the width of ferrite resonance curve:

$$2\Delta H = \frac{4\pi M}{1 + \left(\frac{H_1}{H_0}\right)^2} \frac{d \frac{h}{b} \frac{2}{3} k}{\frac{|T_0|}{|T|} - 1} \cdot \text{The use of this formula presupposes a knowledge of the}$$

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UDC: 538.245

ACC NR: AP7002018



saturation magnetization  $4\pi M$  and the factor  $\gamma = \gamma_{sp} g/2$ , where  $\gamma_{sp}$  - gyromagnetic ratio for electron spin and  $g$  - spectroscopic-split factor; the longitudinal-resonance constant magnetic field  $H_{||} = \omega / \gamma$ . Actual measurements of 4 different-ferrite specimens have proved the validity of the above formula. Although the required measurement of  $4\pi M$  and  $\gamma$  may be regarded as a shortcoming of the new method, these quantities have to be determined anyway in designing many ferrite-containing devices. Orig. art. has: 2 figures, 17 formulas, and 1 table.

SUB CODE: 092/ SUBM DATE: 02Apr64 / ORIG REF: 009 / OTH REF: 002

Card 2/2

KULIKOV, F.

In addition to wages. Sov. profsoyuzy 17 no.8:39-41 Ap '61.

(MIRA 14:3)

1. Predsedatel' profsoyuznogo komiteta zavoda imeni Ukhtomskogo.  
(Lyubertsy--Machinery industry workers)  
(Cost and standard of living)

ROZENBERG, M., inzh.; KULIKOV, F.

Use of keyboard computers in machine accounting. Rech.transp.  
23 no.9:23-26 S '64.

(MIRA 19:1)

1. Glavnyy bukhgalter Cherepovetskogo sudoremontno-sudostroi-  
tel'skogo zavoda (for Kulikov).

KULIKOV, Fedor Andreyevich; KUTSOVSKIY, Filipp Veniaminovich;  
POSTERNYAK, Ye.F., inzh., red.; FREGER, D.P., tekhn.red.

[Quickly built protective device for lathes; practices of the  
"Kalibr" Plant in Moscow] Bystrodeistvuiushchee zashchitnoe  
ustroistvo k tokarnym stankam; opyt moskovskogo zavoda "Kalibr."  
Leningrad, 1956. 3 p. (Leningradskii dom nauchno-tekhnicheskoi  
propagandy. Informatsionno-tekhnicheskii listok, no.2. Moderni-  
zatsiia i remont oborudovaniia) (MIRA 10:12)  
(Lathes)

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APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927420007-0"

KULIKOV, F.A., inzh.; MEL'NIKOVA, N.M., inzh.; DMITROVICH, N.A., inzh.

Faulty instructions for gas-generator operators. Bezop.  
truda v prom. 4 no.7:36 J1 '60. (MIRA 13:8)  
(Gas producers--Safety measures)

KULIKOV, F.G.

Operations of a calculating machine office. Proizv.-tekhn. sbor  
no.1:104-106 '59. (MIRA 13:9)

1. Cherepovetskiy sudoremontno-sudostroitel'nyy zavod.  
(Inland water transportation--Accounting)  
(Calculating machines)

ROZENBERG, Mikhail Yakovlevich; KULIKOV, Fedor Georgiyevich;  
BORULYA, A., red.

[Use of keyboard calculating machines where the journal-  
voucher accounting system is in operation] Primenenie  
schetno-klavishnykh mashin pri zhurnal'no-ordernoi forme  
schetovodstva. Moskva, Finansy, 1965. 83 p.  
(MIRA 18:7)

KULIKOV, F. R. (Engineer)

"A technology for manufacture and annealing of stamp-welded pipe lines from alloys of titanium and AMg6 with thickness of walls 0.6--1.0 mm".

Report presented at the regular conference of the Moscow city administration NTO Mashprom, April 1963.  
(Reported in Avtomaticheskaya Svarka, No. 8, August 1963, pp 93-95, M. M. Popekhin)

JPRS24,651 19 May 64

ACCESSION NR: AP4029384

8/0135/64/000/004/0016/0019

AUTHOR: Kulikov, F. R. (Engineer); Bulina, A. I. (Engineer); Prolov, N. G. (Engineer)

TITLE: Mechanized argon shielded arc spot welding of SN-2 stainless steel and OT-4 titanium alloy

SOURCE: Svarochnoye proizvodstvo, no. 4, 1964, 16-19

TOPIC TAGS: spot welding, SN 2 stainless steel, OT 4 titanium alloy, arc welding, argon arc welding

ABSTRACT: The authors developed a method and equipment for mechanized argon-shielded spot welding of stressed structures open on one side only. In this method the welding gun is pressed against the upper member of the joint with a controlled pressure of 20-200 kg, which ensures a close contact between the members and improves considerably the quality and reliability of the welded joints. The sizes and breaking loads for spot welds in thin (0.4-2.0 mm) sheets of SN-2 stainless steel and OT-4 titanium alloy are presented, with a layout of the welder and the control panel. The best results are obtained with welding under

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ACCESSION NR: AP4029384

rigid conditions, i.e., with high currents. Argon arc spot welding can be successfully used in various branches of the machine-building industry for joining thin sheets or thin sheets to thick sheets. Orig. art. has: 2 tables and 7 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/2

KULIKOV, F.R., inzh.; BULINA, A.I., inzh.

Strength of joints made by mechanized argon arc spct welding.  
Svar. proizv. no.8:18-21 Ag '64.

(MIRA 17:9)

ACCESSION NR: AP4043207

S/0125/64/000/008/0069/0072

AUTHORS: Kulikov, F. R.; Pensidskiy, A. S.

TITLE: Automatic welding of heat compensators

SOURCE: Avtomaticheskaya svarka, no. 8, 1964, 69-72

TOPIC TAGS: automatic welding, heat compensator, steel bellow , seam quality, seam width, seam height, compensator lining, non melting electrode welding, argon arc, compensator lining, seam rolling, seam testing, seam welding optimal condition

ABSTRACT: Automatic welding was investigated as a substitute for the earlier, complicated process of manufacturing the steel bellows used as heat compensators in gas and air ducts. The seams have to be flat, since these bellows consist of 2 layers; hermetic sealing is also required. Welding was done under argon by a non-melting electrode, with subsequent rolling of the seams. A low current was used, since high voltage leads to wide seams. For best results the length of the arc should be  $\leq 3$  mm. The following empirical formula was found for securing optimal conditions:

Card 1/2

ACCESSION NR: AP4043207

$$H = (2 \text{ to } 2.5) \delta; B = (10 \text{ to } 12) \delta,$$

where H is the seam height in mm;  $\delta$  is the thickness of the strips to be welded in mm; and B is the seam width in mm. In the tests  $\delta$  was 0.2 - 0.3 mm. The lining under the seams was preheated; steel lining was found preferable to copper for hermetic sealing. The seams were subsequently rolled; the machine used to this purpose is briefly described. The best results were obtained with a force of 250 to about 300 kg. Throughout the experiments, the specimens were X-rayed for microfissures and tested for mechanical strength. The editors remark in a footnote that such thin sheets may also successfully be welded by pulse-arc. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 18Jan64

ENCL: 00

SUB CODE: MM

NR REF SOV: 000

OTHER: 000

Card 2/2

L 9680-66 EWT(m)/LWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWA(c) IJP(c) EW/TM  
 ACC NR: AP5027599 SOURCE CODE: UR/0135/65/000/011/0013/0016

AUTHOR: Kulikov, F. R. (Engineer); Vas'kin, Yu. V. (Engineer)  
 44.55 44.55

ORG: none

TITLE: Welding of complex-shaped titanium-alloy pipe sections  
 44.55 44.55 21

SOURCE: Svarochnoye proizvodstvo, no. 11, 1965, 13-16

TOPIC TAGS: metal tube, arc welding, titanium alloy, inert gas welding, welding equipment component

ABSTRACT: The authors describe techniques and auxiliary equipment they developed for the annular and longitudinal argon arc welding of intricately shaped sections of titanium pipe measuring 50-200 mm in diameter and 0.6-3 mm in wall thickness (Fig.1). Since some of these sections reached 5 m in length, the authors developed a special device for shielding the atmosphere around the reverse side of the weld seams (Fig.2): the volume of inert gas bounded by two soft stoppers 1 is moved by means of cable 4 throughout tube 5 at a rate coordinated with the movement of the welding torch. The distance between the stoppers is adjusted by rod 2 and the gas is supplied by connecting pipe 3. As for the welding of shorter pipe sections, this may be carried out in a controllable-atmosphere chamber. Since titanium is highly active with respect to nitrogen, oxygen and hydrogen during its argon arc welding at temperatures of

Card 1/3

UDC: 621.791.753.93:621.643.2/3:669.295.5

L 9680-66

ACC NR: AP5027599

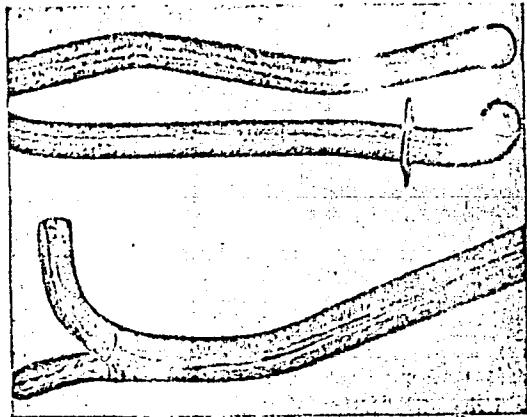


Fig. 1 Die-stamped welded pipe sections of QT4 titanium alloy (wall thickness 0.8 mm)

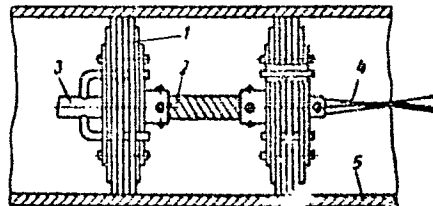


Fig. 2. Mobile shielding unit.

1 - soft stoppers; 2 - connecting rod;  
3 - connecting pipe for admission of  
shielding gas; 4 - cable for pulling  
the unit along the pipe axis; 5 -  
pipe section

Card 2/3

L 90-000

ACC NR: AP5027599

200°C, and this detrimentally affects the quality of the welded joints and leads to the formation of cracks and pores in the weld in some cases, the authors developed special techniques of surface treatment and assembling and welding which, if rigorously observed, assure high-quality welding. For example, surface treatment involves pickling in a  $\text{HNO}_3$  solution and, after final annealing prior to welding, in a  $\text{HCl}$  solution. It is further shown that the few cases of delayed cracking of pipe sections welded by this method are attributable to the insufficiently high level of plastic properties of the base metal. Orig. art. has: 5 figures, 2 tables.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

90  
Card 3/3

ACC NR: AP6006182 SOURCE CODE: UR/0135/66/000/002/0021/0024

AUTHOR: Kulikov, F. R. (Engineer); Persidskiy, A. S. (Engineer); Frolov, N. G. 47  
 (Engineer)

ORG: none B

TITLE: Strength and ductility of VT14 and VT6S titanium-alloy joints obtained by automatic argon-shielded arc welding 18 44,55,27  
 44,55

SOURCE: Svarochnoye proizvodstvo, no. 2, 1966, 21-24

TOPIC TAGS: welding, arc welding, argon shielded arc, titanium, titanium alloy, alloy welding, alloy weld, weld property/VT14 alloy, VT6S alloy

ABSTRACT: Automatic argon-shielded arc welding of VT14 and VT6S titanium-alloy sections 2—18 mm thick has been studied in an attempt to obtain welds with a tensile strength of 115—120 kg/mm<sup>2</sup> at satisfactory ductility (bend angle of at least 35° and a notch toughness of at least 3.5—4.0 mkg/cm<sup>2</sup>). It was found that in sections up to 6 mm thick the required mechanical properties can be obtained by using a filler wire of the Ti-4.5Al-4.5Nb-0.1Re system or a wire containing up to 3.0% Al. In sections over 6 mm thick, commercial low-alloy wires containing  $\alpha$ -stabilizing elements yielded welds with a satisfactory ductility but a low strength, varying from 63.6 to 102.3 kg/mm<sup>2</sup>. Wires with composition similar to that of the base metal or with a high content of  $\beta$ -stabilizing elements yielded welds with a considerably higher

Card 1/2 UDC: 621.791.754:546.293:669.295.5

L 14513-00

ACC NR: AP6006182

strength but a low ductility. It is suggested that Ti-Al-V or Ti-Al-Mo-V alloy weldments over 6 mm thick be welded with fillers of the Ti-2.7Al-3.2 V system and used in the annealed condition, which would ensure a tensile strength of 80—85 kg/mm at a satisfactory ductility and toughness. With an electrode wire containing 4.5—5% aluminum and 4% vanadium, the strength of alloy welds in the annealed and aged condition can be increased to 100—110 kg/mm<sup>2</sup>. This, however, requires the use of special electrode wires, which are now being developed. Orig. art. has: 4 figures and 3 tables.

[ND]

SUB CODE: 11, 13/ SUBM DATE: none/ ATD PRESS: 4/98

TS  
Card 2/2

ACC NR: AP7001458

(A)

SOURCE CODE: UR/0413/66/000/021/0202/0202

INVENTOR: Kulikov, F. R.; Gurevich, S. M.; Anoshkin, N. F.; Moroznikova, S. V.;  
Blashchuk, V. Ye.; Kushnirenko, N. A.; Persidskiy, A. S.

ORG: none

TITLE: Electrode wire for titanium-alloy welding. Class 49, No. 188277

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 202

TOPIC TAGS: electrode wire, titanium alloy, titanium alloy welding

ABSTRACT: This Author Certificate introduces a titanium-base electrode wire which contains 3.5—4.5% aluminum and 2.0—3.0% vanadium, with 1.4—1.6% zirconium added to improve the weld ductility. [ND]

SUB CODE: 13, 11/ SUBM DATE: 28Jul65/ ATD PRESS: 5110

Card 1/1

UDC: 621.791.042.2

ACC NR: AP7001459

(A)

SOURCE CODE: UR/0413/66/000/021/0203/0203

INVENTOR: Gurevich, S. M.; Blashchuk, V. Ye.; Kulikov, F. R.; Persidskiy, A. S.;  
Kushnirenko, N. A.; Anoshkin, N. F.; Moroznikova, S. V.

ORG: none

TITLE: Electrode wire for welding titanium alloys. Class 49, No. 188278

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 203

TOPIC TAGS: titanium alloy, <sup>metal</sup>~~titanium alloy~~ welding, ~~titanium alloy~~ electrode wire

ABSTRACT: This Author Certificate introduces a titanium alloy electrode wire which contains aluminum, iron, chromium, silicon, and boron. To increase the strength and ductility of welds in alloy sections up to 25 mm thick, the wire contains 1.4—1.6% zirconium while the content of other components is set as follows: 1.8—2.0% aluminum, 2.5—2.7% iron, 0.2—0.4% chromium, 0.1—0.15% silicon, and 0.05% boron. [ND]

<sup>13</sup>  
SUB CODE: 11/ SUBM DATE: 28Jul65/ ATD PRESS: 5110

Card 1/1

UDC: 621.791.042.2

ACC NR: AP7001842

SOURCE CODE: UR/0135/66/000/012/0033/0034

AUTHOR: Kulikov, F. R. (Engineer); Kirillov, Yu. G. (Engineer)

ORG: none

TITLE: Weldability of thin AMg6 alloy sections

SOURCE: Svarochnoye proizvodstvo, no. 12, 1966, 33-34

TOPIC TAGS: aluminum magnesium titanium alloy, weldability, thin metal  
weldability, weld porosity, weld air permeability, porosity sealing, alloy welding

ABSTRACT: Poor air tightness caused by hydrogen porosity is the main defect in thin (0.6—1.5 mm) AMg6 alloy sheet welds. All efforts to eliminate the porosity by careful cleaning of the base material and filler wire and by strict control of welding conditions failed. Repairing the defective welds was of little or no help and, in some cases, had a negative effect. Some parts which were air tight showed a leakage after prolonged storage. Several methods for improving the weld airtightness were tested. Painting the welds with an adhesive-base sealant produced the best results. The sealant is not toxic; does not react with alloy, is corrosion resistant, and increases the weight of structure. The strength of adhesion between the sealant and alloy is 90 kg/cm<sup>2</sup>. The welded parts with sealed welds showed no leaks under an air pressure of 3 atm. The properties of sealant are not affected by temperatures from

Card 1/2

UDC: 621.791.011:669.715

ACC NR: AP7001842

-60C to +200C. The effect of the sealant on the fatigue behavior of AMg6 alloys welds is being investigated. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 5111

Card 2/2

ACC NR: AP7001399

SOURCE CODE: UR/0413/66/000/021/0075/0075

INVENTOR: Kulikov, F. R.; Persidskiy, A. S.; Alekseyev, A. K.

ORG: none

TITLE: Chamber for local gas shielding. Class 21, No. 187902

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 75

TOPIC TAGS: <sup>arc</sup>welding, gas shielded arc welding, titanium welding, titanium alloy welding, alloy welding

ABSTRACT:

This Author Certificate introduces a chamber for local gas shielding in arc welding of circumferential joints in spherical or cylindrical parts (see Fig. 1). The chamber consists of two hollow semicylinders, the side walls of which have openings for the part to be welded and carry a gas pipeline with nozzles for creating a laminar gas flow and a gas outlet. To ensure airtight sealing in welding parts made of chemically active materials such as titanium and its alloys and to make it possible to rotate the parts without breaking the seal, the joint of the semicylinders is built in the form

Card 1/2

UDC: 621.791.753.9.037

ACC NR: AP7001399

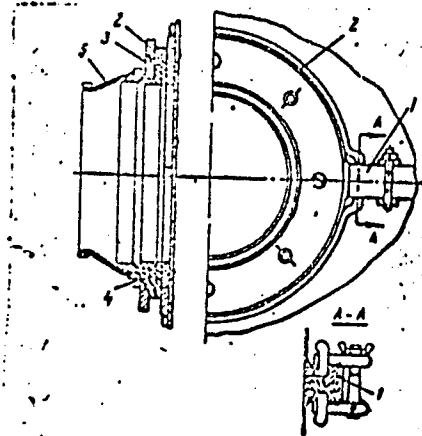


Fig. 1. Chamber diagram.

- 1 - Water-cooled flange;
- 2 - supporting ring; 3 - rotating flange; 4 - clamping ring;
- 5 - elastic conic ring.

of a water-cooled flange, and the openings of the side-walls are provided with sealing flanges consisting of a rotating flange mounted on a supporting ring. In a variant of the chamber, to enable welding of cylindrical parts of dissimilar diameters, the rotating flanges are provided with exchangeable elastic rings in the shape of truncated cones. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 03Mar67 ATD PRESS: 5111  
Card - 2/2

*Remov. F.S.*  
NALIVKIN, V.D.; ROZANOV, L.N.; FOTIADI, E.E.; YEGOROV, S.P.; YENGURAZOV,  
I.I.; KOVALEVSKIY, Yu.S.; KOZACHENKO, A.A.; KONDRAT'YEVA, M.G.;  
KUZNETSOV, G.A.; KULIKOV, F.S.; LOBOV, V.A.; SOFRONITSKIY, P.A.;  
TATARINOV, A.G.; PRITULA, Yuriy Aleksandrovich, redaktor; DAYEV,  
G.A., vedushchiy redaktor; GENNAD'YEVA, I.M., tekhnicheskii  
redaktor.

[Volga-Ural oil-bearing region: Tectonics] Volgo-Ural'skaia ne  
fteenosnaia oblast'. Leningrad, Gos.nauchno-tekhn.izd-vo neft.  
i gorno-toplivnoi lit-ry, 1956. 312 p. (Leningrad. Vsesoiuznyi  
neftianoi nauchno-issledovatel'skii geologo-razvedochnyi institut.  
Trudy, no.100) [Microfilm] (MLRA 10:4)

(Volga Valley--Petroleum geology)

(Ural Mountain Region--Petroleum geology)

KULIKOV, P.S.

Gabbro-diabasic intrusions in pre-Devonian deposits of Bashkiria.  
Geol. nefiti 1 no.3:53-56 Mr '57. (MLRA 10:8)  
(Bashkiria--Gabbros) (Bashkiria--Diabases)

14(5)

SOV/9-59-2-4/16

AUTHOR: Kulikov, F.S.

TITLE: The Arlan-Dyurtyulin Oil-Bearing Zone (Arlan-Dyurtyulinskaya neftenosnaya zona)

PERIODICAL: Geologiya nefti i gaza, 1959, Nr 2, pp 15-22 (USSR)

ABSTRACT: The Arlan-Dyurtyulin oil-bearing area is situated in the North-West part of the Bashkirskaya SSR and spreads from the South-East to the North-West over a length of 85-90 km. In this area oil fields were discovered in the coal-bearing stratum of the Lower Carboniferous and it is supposed that oil deposits exist also in terrigenous formations of the Visian stage and in structures detected by structural drilling. The author gives a detailed description of oil exploration in this zone. The drilled wells revealed the existence of sand collectors and a large area of oil-bearing rocks in the terrigenous deposits of the Lower Carboniferous period. It was stated that erosion of Tournaisian and Famennian rocks and transgressive stratification of these deposits had occurred on different horizons of the Tournaisian and Famennian stages. It is supposed that the Arlan-Dyurtyulin structural zone was formed in the

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| The Arlan-Dyurtyulin Oil-Bearing Zone

SOV/9-51-2-4/16

Tournaisian age during the period of general tectonic movements, which caused the formation of complicated peculiar structures. The conclusion is made that Devonian and Lower Permian rocks have different structures and that oil search in Devonian rocks will be extremely difficult. The author stresses the necessity of extended preparatory work and of improved seismic methods with the use of refracted waves as well as deep drilling of additional prospecting wells. On the whole about 160 exploratory wells must be drilled, that is to say one well per 400 ha. The author suggests, however, that one well per 600 ha would be sufficient, thus reducing the time of exploration. There are one geological map and 2 cross sections.

ASSOCIATION: Bashvostoknefterazvedka

Card 2/2

KULIKOV, F.S.

Petroleum prospecting methods in Bashkiria. Geol.nefti i gaza  
5 no.9:37-43 S '61. (MIRA 14:10)

1. Trest Bashvostoknefterazvedka.  
(Bashkiria--Petroleum geology)  
(Bashkiria--Gas, Natural--Geology)

PRITULA, Yu.A.; ABRIKOSOV, I.Kh.; AVROV, P.Ya.; KAZACHENKO, A.A.; KILIGINA,  
N.I.; KULIKOV, F.S.; MEL'NIKOV, A.M.; TATARINOV, A.G.;  
TROYEPOE'SKIY, V.I.; TSYPLENKOV, G.G.; SHPIL'MAN, A.I.;  
DAYEV, G.A., vedushchiy red.; LINDTROP, N.T., red.;  
YASHCHURZHINSKAYA, A.B., tekhn.red.

[Volga-Ural oil-bearing region; oil potential] Volgo-Uralskaia  
neftenosnaia oblast'; neftenosnost'. Leningrad, Gostekhnizdat,  
1957. 175 p. (Leningrad, Vsesoiuznyi neftianoi nauchno-issledovatel'skii  
geologorazvedochnyi institut. Trudy, no.104). (MIRA 16:8)  
(Volga-Ural region--Petroleum geology)

NALIVKIN, V.D.; KULIKOV, F.S.; MOROZOV, S.G.; SLEPOV, Yu.N.

New big graben in the east of the Volga-Ural region. Geol.  
nefti i gaza 8 no.3:14-17 Mr '64.

(MIRA 17:6)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.

KULIKOV, F.S.; MOROZOV, S.G.; SLEPOV, Yu.N.

Geologic history of ancient structures in the eastern boundary of the Russian Platform in connection with oil and gas prospecting in Bavlly sediments. Neftegaz. geol. i geofiz. no.11:10-15 '65.  
(MIRA 18:12)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.

PROCESSING AND PROPERTIES INDEX

BC

A-1

Distribution of trichloroacetic acid between two contiguous liquid phases. N. A. DE KOLOSOVSKI and V. S. KULIKOV (*J. Gen. Chem. Russ.*, 1934, 4, 915-916). The partition coeff.,  $y$ , of  $\text{CCl}_3\text{COOH}$  for the systems  $\text{H}_2\text{O}-\text{PhMe}$ , -cuneane,  $-\text{CHCl}_3$ ,  $-\text{CCl}_4$ ,  $-\text{EtBr}$ ,  $-\text{PhNO}_2$ , -n. and sec.  $\text{C}_8\text{H}_{17}\text{OH}$ , and  $-\text{CH}_3\text{Ph-OH}$ , at  $25^\circ$  is given by  $y = k_1 c + k_2$ , where  $k_1$  and  $k_2$  are const., and  $c$  is the total concn. of  $\text{CCl}_3\text{COOH}$ . R. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

Co  
Distribution of isovaleric acid between two liquid phases. XI. N. A. Kolosovskii  
F. S. Kulikov and A. Bekturov. J. Gen. Chem. (U. S. S. R.) 4, 1153-6(1934);  
cf. C. A. 28, 4964<sup>2</sup>. - In the following 2-phase systems the 1st figures show the  
variations in  $C_1 + C_2$  and the 2nd figures corresponding variations in  $C_1/C_2$  at  
25° ( $C_1$  and  $C_2$  are the conc. of isovaleric acid in g. equiv.s per l. of  $H_2O$  and of  
an org. solvent, resp.):  $H_2O-C_6H_5$  0.0162-8.210, 0.975-0.058;  $H_2O-CHCl_3$  0.0067-  
5.672, 0.523-0.0455;  $H_2O-PhNO_2$  0.0167-8.210, 0.716-0.058;  $H_2O-145-C_6H_5$  0.0110-  
7.759, 0.100-0.060.

S. L. Madorsky

ASB-SLR METALLURGICAL LITERATURE CLASSIFICATION

2  
Distribution of butyric and isobutyric acids between two liquid phases. N. A. Kolosovskii, P. M. Kulikov and A. Bekturov. J. Gen. Chem. (U. S. S. R.) 4,1231-7 (1934); cf. 2 preceding abstr.--In this series of expts. made at 25°, a study is made of the effect of structure (isomerism) of a fatty acid on its distribution between H<sub>2</sub>O and an org. liquid solvent. In the following systems the variations in  $\frac{C_1}{C_2}$  and in  $\frac{C_1}{C_2}$  are given: (a) butyric acid: in H<sub>2</sub>O-CCl<sub>4</sub> 0.01791-9.2092, 5.70-0.362; in H<sub>2</sub>O-PhNO<sub>2</sub> 0.010-7.909, 2.5-0.188; in H<sub>2</sub>O- $\alpha$ -NH<sub>2</sub> 0.02564-7.385, 0.100-0.200; (b) isobutyric acid in H<sub>2</sub>O-CCl<sub>4</sub> 0.01425-10.2084, 4.712-0.264; in H<sub>2</sub>O-PhNO<sub>2</sub> 0.1309-6.043, 1.33-0.187; in H<sub>2</sub>O- $\alpha$ -NH<sub>2</sub> 0.02907-7.765, 0.119-0.238; in H<sub>2</sub>O-iso- $\alpha$ -NH<sub>2</sub> 0.6358-5.1827, 0.133-0.174.

S. L. Madorsky.

CA

1ST AND 2ND GROUPS PROCESSES AND PROPERTIES INDEX

2

Distribution of saturated monobasic aliphatic acids between water and *o*-nitrotoluene. N. A. Kolesovskii and E. B. Kulikov. *J. Gen. Chem.* (U. S. S. R.) 4, 1370 (1954); cf. *C.* 7.29,663<sup>1</sup>. -By designating as  $C_1$  and  $C_2$  the quantities of fatty acid in g. equivs. per l. of  $H_2O$  and *o*-nitrotoluene, resp., data are given for  $C_1$  and  $C_2$  for the following acids, at 25°. For  $HCOOH$ ,  $C_1$  varies from 0.073 to 17.763 and  $C_2$  from 0.0047 to 3.969; for  $AcOH$ ,  $C_1$ , 0.1418-0.753,  $C_2$ , 0.0049-5.987; for  $CH_3COOH$ ,  $C_1$ , 0.0124-8.020,  $C_2$ , 0.0050-7.901; for  $CH_3CH_2COOH$ ,  $C_1$ , 0.0350-1.280,  $C_2$ , 0.0184-6.540; for  $(CH_3)_2CHCOOH$ ,  $C_1$ , 0.0150-0.488,  $C_2$ , 0.0225-8.026; for  $CH_3CH_2CH_2COOH$ ,  $C_1$ , 0.0334-7.901,  $C_2$ , 0.0053-3.774; for  $CH_3CH_2CH_2CH_2COOH$ ,  $C_1$ , 0.0228-4.457,  $C_2$ , 0.0043-4.838; for  $CH_3CH_2CH_2CH_2CH_2COOH$ ,  $C_1$ , 0.0508-2.580,  $C_2$ , 0.0054-3.591.

S. L. Madorsky

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

SECTION ONE

SECTION TWO

SECTION THREE

SECTION FOUR

SECTION FIVE

SECTION SIX

SECTION SEVEN

SECTION EIGHT

SECTION NINE

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1ST AND 2ND CODES		PRECEDENCE AND PROPERTIES INDEX									
<p>Distribution of hydrogen peroxide between water and ester. N. A. Kolomoyskiy and P. S. Kulikov. <i>Ukrain. Khim. Zhur.</i> 9, Wiso.-tech. Teil 37-40 (1934) (in Russian). — The curve representing the change at 25° in the coeff. of distribution of <math>H_2O_2</math> between water and <math>KIO_4</math>Ac, with the total concn. shows a steady decrease of the coeff.; the curve for the system water-<math>AsO_4</math>Ac has 2 sharp points in its general decline after a slight rise; that for the system of water-Kt malonate is parabolic in form. These curves are basically different from those obtained for distribution of various acid. monobasic acids and also chloro-substituted acids between 2 immiscible solvents. The 3 groups have in common only the tendency of their coeff. of distribution to approach 1 with increase in concn.</p> <p style="text-align: right;">I. G. Tolpin</p>											
<p>ASD-164 METALLURGICAL LITERATURE CLASSIFICATION</p>											
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1ST AND 2ND CODES		PRECEDENCE AND PROPERTIES INDEX									
<p>ASD-164 METALLURGICAL LITERATURE CLASSIFICATION</p>											

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Partition of tartaric and citric acids between water and isobutyl alcohol. N. A. Kolosovskii and P. S. Kulikov. *Ukrain. Khim. Zhur.* 9, 143-7(1934); cf. C. A. 29, 4839.—The relative concn. of the acids in the aq. layer increases with increasing diln. B. C. A.

COMMON ELEMENTS

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(R)

Distribution of nicotine between water and organic solvents. N. A. Kolosovskii and E. S. Kulikov. *Arkh. Vopr. Anar. Medits.* (Tashkent) 57: 17, No. 8, 128 (1975); cf. *C. A.* 30, 2404. Distribution coeffs. for nicotine between  $H_2O$  and  $CH_2Cl_2$ , xylene, decalin, light petroleum,  $CCl_4$ ,  $CHCl_3$ ,  $CHBr_3$ ,  $C_6H_6$ ,  $PhH$ ,  $PhNO_2$ ,  $Et_2O$ , isononyl ether, iso- $C_4H_9OH$ ,  $PhCH_2OH$ ,  $m$ -cresol, cyclohexanone and  $CS_2$ , resp., and between glycerol and  $CS_2$  at 25°, have been detd. The results are discussed. H. C. A.

ASB 55.4 METALLURGICAL LITERATURE CLASSIFICATION

CA

2

Distribution of chloroacetic acids between water and halogen derivatives of saturated hydrocarbons. N. A. Kolesovskii and F. S. Kulikov. *J. Gen. Chem.* (U.S.S.R.) 5, 63-81(1935); cf. C. A. 28, 7114<sup>1</sup>—C<sub>1</sub> and C<sub>2</sub> being the concns. of chloroacetic acid in H<sub>2</sub>O and a halogen deriv. of a satd. hydrocarbon, in mols per l., resp., at 25°, the results are (1st number stands for C<sub>1</sub> and 2nd for C<sub>2</sub>): for the system CH<sub>3</sub>COOH in H<sub>2</sub>O and CCl<sub>4</sub> 0.2588, 0.000748; 0.525, 0.0022; 1.031, 0.00549; 1.523, 0.00835; 2.432, 0.0103; 8.839, 0.0204; 5.524, 0.0445; 7.082, 0.073; 0.088, 0.200; 0.813, 0.437; and 10.029, 0.605; for the system CH<sub>3</sub>COOH in H<sub>2</sub>O and C<sub>2</sub>H<sub>5</sub>Br 0.0051, 0.0001; 0.246, 0.010; 0.452, 0.0320; 0.747, 0.0505; 1.421, 0.118; 2.289, 0.191; 3.330, 0.267; 5.315, 0.398; 7.006, 0.607; 7.831, 1.512; and 7.982, 1.016; for the system CH<sub>3</sub>COOH in H<sub>2</sub>O and CH<sub>3</sub>I 0.213, 0.0040; 0.352, 0.0082; 0.81, 0.0102; 0.955,

0.0290; 1.468, 0.0501; 2.503, 0.0820; 3.485, 0.131; 4.811, 0.174; 6.028, 0.241; 7.464, 0.306; 8.023, 0.700; 8.850, 0.900; and 8.688, 1.103; for the system CHCl<sub>3</sub>COOH in H<sub>2</sub>O and CCl<sub>4</sub> 0.216, 0.00053; 0.462, 0.00281; 0.846, 0.00778; 1.481, 0.0178; 2.203, 0.0280; 3.259, 0.0427; 4.926, 0.0628; 6.081, 0.095; 6.730, 0.119; 6.953, 0.147; 7.503, 0.226; 7.881, 0.432; 7.762, 0.607; and 5.798, 2.870; for the system CHCl<sub>3</sub>COOH in H<sub>2</sub>O and C<sub>2</sub>H<sub>5</sub>Br 0.0548, 0.0005; 0.0726, 0.0150; 0.344, 0.083; 0.500, 0.164; 0.866, 0.264; 1.520, 0.480; 2.002, 0.628; 3.238, 0.910; and 4.681, 1.343; for the system CCl<sub>4</sub>COOH in H<sub>2</sub>O and CH<sub>3</sub>I, 0.1974, 0.0089; 0.345, 0.0211; 0.5038, 0.0544; 0.839, 0.124; 1.146, 0.239; 1.650, 0.544; 2.000, 0.719; 2.504, 0.981; 3.440, 1.324; 3.440, 1.702; 3.174, 1.033; and 2.031, 2.107. The results are compared with those of other investigators. S. L. M.

ADDITIONAL LITERATURE CLASSIFICATION

ADDITIONAL LITERATURE CLASSIFICATION

11 AND 12 GROUPS

PROCESSES AND PROPERTIES

Distribution of saturated organic acids between two liquid phases. M. A. Kolonovskii, P. S. Kulikov and A. Bekturov. *Russ. Rev. Chem.* (S), 4, 460-70, (1945). cf. C. A. 20, 3577-3578A. --About 50 tables show the partition coeffs. at different concns. for the systems: propionic acid between  $H_2O$  and xylene, decalin,  $CHCl_3$ ,  $CCl_4$ ,  $EtBr$ ,  $PhNO_2$ ,  $o$ - $MeC_6H_4NO_2$ ,  $iso$ - $BuOH$  and  $iso$ - $AmOH$ ; butyric acid between  $H_2O$  and  $PhNO_2$ ,  $o$ - $MeC_6H_4NO_2$ ,  $iso$ - $BuOH$  and  $iso$ - $AmOH$ ; isobutyric acid between  $H_2O$  and  $CCl_4$ ,  $PhNO_2$ ,  $AmOH$ , and  $iso$ - $AmOH$ ; isovaleric acid between  $H_2O$  and xylene,  $CHCl_3$ ,  $CCl_4$ ,  $EtBr$ ,  $PhNO_2$ ,  $o$ - $MeC_6H_4NO_2$ ,  $iso$ - $BuOH$  and  $iso$ - $AmOH$ ;  $HCOOH$  between  $H_2O$  and  $PhNO_2$  and  $o$ - $MeC_6H_4NO_2$ ;  $AcOH$  between  $H_2O$  and  $PhNO_2$  and  $o$ - $MeC_6H_4NO_2$ ;  $\alpha$  lactic acid, tartaric acid, citric acid and malonic acid between  $H_2O$  and  $iso$ - $AmOH$ ; malonic acid between  $H_2O$  and  $iso$ - $BuOH$ ; dimethylmalonic acid between  $H_2O$  and  $AmOH$  and  $H_2O$ ;  $BuOH$  between  $H_2O$  and  $iso$ - $BuOH$ ; phenylacetic acid between  $H_2O$  and  $PhMe$ ,  $PhNO_2$  and  $iso$ - $AmOH$ .  
B. A. Soule

ASB-31.4 METALLURGICAL LITERATURE CLASSIFICATION

SECTION 117.01.01

SECTION 117.01.01

PRINCIPLES AND PROPERTIES																																																						
COMMON ELEMENTS													RARE ELEMENTS																																									
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<p>2</p> <p>A Paradox in the field of distribution of a solute between two liquid phases). N. A. Kokosovskii and F. S. Kulikov. <i>J. Gen. Chem.</i> (U. S. S. R.) 5, 1037-40 (1935). In the distribution of a solute between 2 liquid phases, under certain conditions, when the amt. of one of the phases is increased by the addn. of the pure solvent, at any given temp., the concn. of the solute in both phases may increase simultaneously. This is attributed to their mutual change of vols. of the 2 phases caused by their mutual soly.</p> <p>S. L. Madorsky</p>																																																						
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																																																						
<table border="1"> <tr> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> <td>120000</td> </tr> </table>																										120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000
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3. Distribution of fatty acids between glycerol and other organic solvents. N. A. Kolosovskii and V. S. Kulikov. *J. Gen. Chem.* (U. S. S. R.) 5, 1041 (1935), (C. C. 3. 29). 7165-7. All the measurements were made at 25°. In the following, the 1st number in each pair represents carbon, in the fatty acid in glycerol and the 2nd number, its carbon, in the other org. solvent. For the system propionic acid in glycerol +  $\text{CHCl}_3$  0.348, 0.405; 0.543, 0.817; 0.703, 1.538; 1.200, 2.708; 1.901, 3.480. For isovaleric acid in glycerol +  $\text{CHCl}_3$  0.0091, 0.0206; 0.0372, 0.1112; 0.120, 0.3837; 0.2000, 1.7243; 0.3531, 3.0249, 0.5061, 4.120, 0.8083, 5.5613. For isovaleric acid in glycerol + toluene 0.0030, 0.0080; 0.424, 0.1157; 0.0782, 0.2884; 0.117, 0.4849; 0.2119, 1.2076; 0.3390, 2.6936; 0.6627, 5.133; 0.0660, 0.4591; 1.3590, 7.0032. For isovaleric acid in glycerol +  $\text{CaH}_2\text{SO}_4$  0.0153, 0.0100; 0.0725, 0.1039; 0.2014, 0.4732; 0.3013, 0.9216; 0.4064, 1.5242; 0.606, 2.8132; 0.8045, 4.3784; 1.5183, 5.6008. In the system isovaleric acid in glycerol +  $\text{CHCl}_3$ , glycerol becomes the lower layer beginning with distribution of the acid 0.5061, 4.1195.

fluence of temperature on the distribution of water  
in the soil. The results of the experiments  
showed that the distribution of water in the soil  
is affected by temperature. The results of the  
experiments showed that the distribution of water  
in the soil is affected by temperature. The results  
of the experiments showed that the distribution of  
water in the soil is affected by temperature.

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927420007-0

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927420007-0"

USSR/Chemistry - Book review

Card 1/1 : Pub. 147 - 20/27

Authors : Kulikov, F. S.

Title : Regarding the report by S. V. Gorbachev and E. Ya. Mindovich entitled, "Distribution of Picric Acid", Parts 1 and 2

Periodical : Zhur. fiz. khim. 28/12, 2232-2233, Dec 1954

Abstract : Critical review is presented on the report by S. V. Gorbachev and E. Ya. Mindovich entitled, "Distribution of Picric Acid". The critic points out the errors in the report and explains that the errors originated because the authors applied the Boltzmann distribution law which is inapplicable in such a case instead of the Berthellet law which is best suited for such problems. Five references ; 1 French; 3 USSR and 1 German (1870-1953).

Institution : .....

Submitted : March 26, 1954

55300

27834

S/032/61/027/010/007/022  
B110/B101

AUTHORS: Lipshits, B. M., Smirnova, G. K., and Kulikov, F. S.

TITLE: Determination of iron in highly pure antimony

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 10, 1961, 1199 - 1200

TEXT: The determination of iron in Sb metal by means of thiocyanate is disturbed by the formation of a yellow precipitate.  $\alpha$ ,  $\alpha'$ -dipyridyl forms a stable, soluble ferrodipyridyl complex ion, whose red color exactly obeys Lambert-Beer's law, and which is concentrated in a thin cresol layer. 1 - 5g of Sb metal was dissolved in a mixture of 5 parts of HCl 1:1 and 1 part of  $\text{HNO}_3$  (1:1), and evaporated to dryness at  $<100^\circ\text{C}$  since otherwise the iron volatilizes. The residue was dissolved in 50 ml solution of tartaric acid, NaCl,  $\text{Na}_2\text{SO}_3$ , and NaOH purified from iron, (to form the soluble Sb complex), and boiled for 3 - 5 min. The pH should be 3 - 4. 2.0 ml  $\alpha$ ,  $\alpha'$ -dipyridyl solution was added, filled up to 50 ml, and colorimetric measurement was conducted after 1 hr. When red coloring fails to appear, 15 - 20 ml Sb solution and 1 ml colorless cresol are

Card 1/3

Determination of iron in highly pure...

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B110/B101

filled in portions into a separating funnel, and shaken each time for 2 min. After extraction of the Fe complex, 0.1 g Fe in 5 g Sb may be visually determined by comparison with standard solutions. For plotting the calibration curve, standard solutions containing 0 - 5 g Fe are filled with 1 ml 10% hydroxylamine solution, 0.2%  $\alpha$ ,  $\alpha'$ -dipyridyl solution, and 5 ml acetate buffer (0.5 ml glacial acetic acid and 0.3 g sodium acetate in 100 ml  $H_2O$ ). The solutions are filled up to 25 ml with  $H_2O$  and colorimetrically measured after 30 min on an  $\Phi 3K-H-57$  (FEK-N-57) with green light filter. Admixtures of Ni, Cd, As, Pb, Mn, Co, Bi, Ag, Pt, Au, Hg, Cu, Zn amounting to the 2 - 4 fold of the Fe content do not disturb. The acids used for dissolving Sb should be of special purity. 7.5 g NaCl, 15 g  $Na_2SO_3$ , 30 g tartaric acid, 10 - 11 g NaOH were dissolved in 150 ml aqua dest., shaken, brought to pH ~ 4 - 5 by means of NaOH or HCl, and boiled for 3 - 5 min. 45 ml  $\alpha$ ,  $\alpha'$ -dipyridyl solution was added and left standing for 18 - 20 hr under seal. 70 ml cresol was added in the separating funnel, and the Fe-free aqueous layer was filtered off. The solution was investigated for the presence of Fe by means of 0.5 ml  $\alpha$ ,  $\alpha'$ -dipyridyl solution and color comparison with aqua dest. When red coloring failed

Card 2/3

27834

Determination of iron in highly pure...

S/032/61/027/010/007/022  
B110/B101

to appear, the solution was filled up to 600 ml with H<sub>2</sub>O.

ASSOCIATION: Institut tsvetnykh metallov i zolota im. M. I. Kalinina  
(Institute of Nonferrous Metals and Gold imeni M. I. Kalinin)

Card 3/3

MURACH, N.N.; KRAPUKHIN, V.V.; KULIKOV, F.S.; CHERNYAYEV, V.N.; NEKHAMKIN, L.G.

Certain regularities in the extraction of germanium chloride. Zhur.  
prikl.khim. 36 no.10:2188-2194 0 '61. (MIRA 14:11)  
(Germanium chloride) (Extraction (Chemistry))

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21a-142. Experimental Investigation  
of the Strength of Metals and Joints  
in Construction of Electrical Machin-  
ery. (In Russian.) I. A. Odintsov and  
F. V. Kulikov. *Collection of Reports  
Concerning the Dynamic Strength of  
Machine Parts*, Academy of Sciences  
of the USSR, 1948, p. 238-253.  
The study of the phenomena of  
fatigue, creep, and internal stress is  
complicated by the existence of spe-  
cific peculiarities in the design of  
such machinery.

PA 38/49781

USSR/Engineering  
Solders  
Tin Alloys

Feb 49

"The Problem of Economizing on Stannous Alloys (Solders) in Electrical Manufacture," F. V. Kulikov, Engr, Tech Adm, Min of Elec Ind, 6 pp

"Vest Elektro-Prom" No 2

Solder of high tin content is used indiscriminately. Lists processes in which this solder may be used, and those in which solders of low tin content should be used. Experiment carried out by "Elektrosila" plant, in which the use of hard phosphorous copper

38/49781

USSR/Engineering (Contd)

Feb 49

solders resulted in saving silver and tin, should be repeated in other plants. Discusses judicious use of three types of babbitt for different bearing types.

KULIKOV, F. V.

38/49781

ODING, I.A.; KULIKOV, P.Y.

Investigating the properties of rolled babbitt. Tren. i izn. mash.  
no. 7:119-150 '53. (MLRA 9:9)

1. Chlen-korrespondent AN SSSR (for Oding).  
(Babbitt metal) (Bearings (Machinery))

KULIKOV, F. V., Cand Tech Sci -- (diss) "Study of the Properties of ~~the~~ Rolled Babbitt and Possibilities of Its Use for Bearings of Steam Turbines, Turbo- and Hydro-Generators and Electric Machines." Mos, 1957. 22 pp (Min of Higher Education USSR, Mos Order of Lenin Power Engineering Inst), 100 copies (KL, 48-57, 106)

- 32 -

KOTOV, Or Kirillovich; KEGIRER, Z.L., inzh., retsenzent; KULIKOV, P.V.,  
kand.tekhn.nauk, red.; SAVEL'YEV, Ye.Ya., red. 1zd-7a; EL'KIND,  
V.D., tekhn.red.

[Surface hardening of machine parts by chemical and heat  
treatment] Poverkhnostnoe uprochnenie detalei mashin khimiko-  
termicheskimi metodami. Moskva, Gos. nauchno-tekhn.izd-vo  
mashinostroit. lit-ry, 1958. 166 p. (MIRA 12:1)  
(Case hardening) (Cementation (Metallurgy))

25(1)

PHASE I BOOK EXPLOITATION

SOV/2901

Kulikov, Fedor Vasil'yevich, and Il'ya Romanovich Lekhtsiyer

Osnovnyye metody myagkoy i tverdoy payki (Basic Methods of Soldering and Brazing) Moscow, Trudrezervizdat, 1958. 127 p. 15,000 copies printed. (Series: Biblioteka molodogo rabochego)

Scientific Ed.: I.I. Il'yevskiy; Ed.: T.I. Rychek; Tech. Ed.: Yu.N. Gorokhov.

PURPOSE: This booklet is intended for junior specialists of labor-reserve schools working in soldering. It may also be useful to foremen and instructors.

COVERAGE: This booklet contains information on the compositions and properties of solders and fluxes used in industry. General problems of soldering and brazing and the equipment commonly used in the processes are discussed. No personalities are mentioned. There are 15 references, all Soviet.

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KULIKOV, F. V.

PHASE I BOOK EXPLOITATION

551

Kryanin, Ivan Romanovich

Lopasti gidroturbin; kavitatsionnyye razrusheniya, izyskaniye i issledovaniye materialov (Hydraulic Turbine Blades; Destruction Due to Cavitation; Investigation and Development of Materials) Moscow, Mashgiz, 1958. 206 p. 2,200 copies printed.

Reviewer: Vedenkin, S.G., Professor; Ed.: Kulikov, F.V., Engineer; Tech. Ed.: El'kind, V.D.; Managing Ed. for general technical literature and literature on transport, highway and power machine building (Mashgiz): Ponomareva, K.A., Engineer.

PURPOSE: This book is intended for engineers and technical personnel working in machine manufacturing plants, hydraulic power plants, and in scientific research institutes dealing with the problems of hydraulic turbine construction. It may also be useful to students of higher technical institutes.

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Hydraulic Turbine Blades (Cont.)

551

COVERAGE: This book deals with problems in the development and analysis of materials used for manufacturing powerful hydraulic turbine blades. The author states that the intensive growth of Soviet hydraulic turbine building has resulted in a demand for new materials and increased research in this field. The basic characteristics of turbine blade function and the cavitation erosion of materials are discussed in detail. The book contains research data on various types of steels and alloys used for hydraulic turbine blades. There are 124 references of which 102 are Soviet, 10 English, and 12 German.

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PHASE I BOOK EXPLOITATION SOV/3720

Kulikov, Fedor Vasil'yevich, and Il'ya Romanovich Lekhtsiyer

Tverdaya payka (Brazing) Moscow, Gosenergoizdat, 1959. 175 p. 10,000 copies printed.

Ed.: M.M. Zil'bersheyd; Tech. Ed.: N.I. Borunov.

PURPOSE: This book is intended for technologists, assemblers, designers, and other workers in electrical-engineering plants and planning organizations.

COVERAGE: The book deals with the physical nature of brazing processes and the chemical compositions and physical and mechanical properties of brazing materials and fluxes. Descriptions of brazing methods and equipment are presented. No personalities are mentioned. There are 47 references: 42 Soviet and 5 English.

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